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Central and Arctic Region

Proceedings of the regional advisory process on the Arctic Char (*Salvelinus alpinus*) population from Qasigiyat Lake, Cumberland Sound, Nunavut

January 10-11, 2011

Iqaluit, Nunavut

Ross F. Tallman, Chairperson

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Canada

Foreword

The purpose of these Proceedings is to document the activities and key discussions of the meeting. The Proceedings may include research recommendations, uncertainties, and the rationale for decisions made during the meeting. Proceedings may also document when data, analyses or interpretations were reviewed and rejected on scientific grounds, including the reason(s) for rejection. As such, interpretations and opinions presented in this report individually may be factually incorrect or misleading, but are included to record as faithfully as possible what was considered at the meeting. No statements are to be taken as reflecting the conclusions of the meeting unless they are clearly identified as such. Moreover, further review may result in a change of conclusions where additional information was identified as relevant to the topics being considered, but not available in the timeframe of the meeting. In the rare case when there are formal dissenting views, these are also archived as Annexes to the Proceedings.

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SUMMARY

A Regional Science Advisory Process (RAP) to assess Arctic Char from Qasigiyat Lake (Ptarmigan Fjord, Cumberland Sound) was held in Iqaluit on January 10-11, 2011. The objectives of the meeting were to (1) assess and report on the current status of the Qasigiyat Lake Arctic Char stock, including a review of all new information; (2) identify and highlight sources of uncertainty in the assessment; (3) provide advice on a total sustainable harvest level for the stock; and (4) develop a monitoring plan to assess the long-term sustainability of the fishery. Meeting participants included fishers from Pangnirtung, a member of the Pangnirtung Hunters and Trappers Organization (HTO), the Government of Nunavut Fisheries and Sealing, Pangnirtung Fisheries Ltd, Fisheries and Oceans Canada (DFO) Science and Fisheries Management, DFO Science in Newfoundland and Labrador region and external experts from the University of British Columbia and University of Manitoba. The participants reviewed the available science information for the stock, and reached a general consensus that the Arctic Char stock from Qasigiyat Lake is currently harvested at a sustainable level (at or below the maximum sustainable harvest level). Patterns in biological characteristics of the population were generally confirmed by information provided by the Pangnirtung participants. They provided their knowledge of the Qasigiyat Arctic Char stock which was incorporated into the assessment, and underlined the importance of integrating traditional knowledge (Inuit Qaujimajatuqangit) information particularly in early stages of sampling design and data interpretation.

Compte rendu du processus de consultation régionale sur la population d'omble chevalier (*Salvelinus alpinus*) de lac Qasigiyat, dans la baie Cumberland, au Nunavut

SOMMAIRE

Un processus d'avis scientifique régional s'est tenu les 10 et 11 janvier 2011 pour évaluer l'omble chevalier de Qasigiyat (le fjord Ptarmigan dans la baie Cumberland). La réunion avait pour objectif de : 1) évaluer l'état actuel de la population d'ombles chevaliers de Qasigiyat et produire un rapport à cet égard, y compris un examen de toute nouvelle information; 2) relever les sources d'incertitudes dans l'évaluation; 3) formuler un avis sur un niveau de prélèvement total durable pour le stock; 4) élaborer un plan de surveillance pour évaluer la durabilité à long terme de la pêche. Parmi les participants à la réunion, on comptait des pêcheurs de Pangnirtung, un membre de la Pangnirtung Hunters and Trappers Organization (HTO), le gouvernement du Nunavut (Pêches et chasse au phoque), Pangnirtung Fisheries ltée, la Gestion des pêches et les Sciences de Pêches et Océans Canada (MPO), les Sciences de la région de Terre-Neuve-et-Labrador du MPO ainsi que des experts externes de l'Université de la Colombie-Britannique et de l'Université du Manitoba. Les participants ont passé en revue les renseignements scientifiques existants sur le stock et se sont entendus sur le fait que le stock d'ombles chevaliers de Qasigiyat est actuellement exploité à un niveau durable (égal ou en dessous du niveau d'exploitation durable maximum). Les tendances concernant les caractéristiques biologiques de la population ont été confirmées en général par les renseignements fournis par les participants de Pangnirtung. Leur savoir sur le stock d'ombles chevaliers de Qasigiyat a été intégré à l'évaluation, ce qui témoigne de l'importance d'intégrer le savoir traditionnel (Inuit Qaujimajatuqangit), notamment dans les premières étapes de la conception de l'échantillonnage et de l'interprétation des données.

INTRODUCTION

A Regional Science Advisory Process to assess Qasigiyat Lake Arctic Char was held at the Frobisher Inn in Iqaluit on January 10-11, 2011. The objectives of the meeting, as described in the Terms of Reference (Appendix 1), were to (1) assess and report on the current status of the Qasigiyat Lake Arctic Char stock, including a review of all new information; (2) identify and highlight sources of uncertainty in the assessment; (3) provide advice on a total sustainable harvest level for the stock; and (4) develop a monitoring plan to assess the long-term sustainability of the fishery. A draft working paper was prepared by Fisheries and Oceans (DFO) and distributed for review to invited participants prior to the meeting. This document contained the scientific information being reviewed at the meeting and from which a Science Advisory Report for the stock would be produced. The participants included fishers from Pangnirtung, two members of the Pangnirtung Hunters and Trappers Organization (HTO), the Government of Nunavut Fisheries and Sealing, Pangnirtung Fisheries Ltd, DFO Science and Fisheries Management, and experts from the University of British Columbia, University of Manitoba, and DFO's Newfoundland and Labrador region. A complete list of meeting participants is presented in Appendix 2. The meeting generally followed the agenda included in Appendix 3.

WELCOME AND OPENING REMARKS

Presenter: R. Tallman, meeting Chair

Meeting participants were welcomed and invited to introduce themselves. The Chair informed all participants of the main objective of the meeting that was to review the scientific information presented in the working document and to agree on the statements, recommendations and conclusions to be included in the Science Advisory Report for Qasigiyat Lake Arctic Char. The meeting Chair also outlined the importance of the presence and involvement of community members and fishers in the meeting, stating that their knowledge and contributions were equally valuable to science information in the advisory process. All participants were encouraged to express their ideas and opinions and to comment freely as experts.

The meeting began with an opening prayer by Peter Kanayuq from Pangnirtung.

REVIEW OF THE AVAILABLE SCIENCE INFORMATION: QASIGIYAT ARCTIC CHAR ASSESSMENT

Author and presenter: Z. Martin

Background Information

The review of the working document began with a general discussion on background information for the Qasigiyat Lake Arctic Char fishery, which emphasized traditional knowledge. The importance of having working documents translated into Inuktitut prior to the beginning of the meeting was pointed out by some of the fishers and recognized by the meeting organizers.

Harvesters from Pangnirtung explained that Qasigiyat Lake is located within traditional summer hunting grounds for the local Inuit. One fisherman described how he grew up camping and living off the land in the Qasigiyat Lake area every summer, with Arctic Char being harvested for subsistence by families, but mainly as a secondary food source after caribou. In the 1970s, the site was used for hunting for a period of approximately one month each year, during which time most Arctic Char had already migrated back into Qasigiyat Lake and were harvested using fishing rods.

Community members and harvesters indicated that subsistence harvests of Arctic Char from Qasigiyat Lake have been minimal over the past twenty years or so. This is because (i) fewer people now travel to the area for hunting during summertime when fishing is done in the fiord; (ii) fishing in the winter or spring is now generally prevented by poor ice conditions in Cumberland Sound and Ptarmigan Fjord, making the distance to Qasigiyat Lake not worth the time and investment; and (iii) there are many other lakes where Arctic Char are plentiful during wintertime that are located closer to Pangnirtung and used for subsistence harvest by the community. According to elders and fishers, the Arctic Char stock from Qasigiyat Lake is at present harvested mainly for commercial fishing purposes.

Fishers were asked whether there existed some particularities to the Arctic Char from Qasigiyat Lake that should be documented. Their answer was that all Arctic Char stocks within the Cumberland Sound Area are very different. It was however noted during the course of the meeting that compared to other systems, surface waters in Qasigiyat Lake (presumably the fjord area where fishing takes place in the summer) have a lower salinity (i.e., were described as being "almost good for tea" by one fisherman). Fishers also mentioned the absence of seasonal, physical barriers to Arctic Char movement in this system, explaining that access to overwintering habitat/areas is never a problem for Arctic Char in Qasigiyat Lake. Another particularity that was documented is the maintenance of an open-water area in the Lake throughout the winter. Finally young-of-the-year (YOY) Arctic Char have been observed in the tidal area between the fjord and the lake during the summertime by both harvesters and scientists.

Commenting on the current state of summer harvests of Arctic Char in Qasigiyat Lake, fishers mentioned important inter-annual variability in the catch. They attribute such variability to changes in the spatial distribution of Arctic Char in the system, as this is determined by salinity gradients and precipitation levels affecting runoff. The general trend described by fishers is that in dry years with less rainfall, more Arctic Char remain in upstream areas of Qasigiyat Lake, and thus their abundance in the fjord (where fishing occurs) is generally lower. Conversely in wet years with significant rainfalls, more Arctic Char can be found in the fjord, closer to sea. There was consensus among fishers that the catch is usually best in years with abundant rainfall resulting in increased freshwater inputs into the Qasigiyat Lake system. Thus based on traditional knowledge information, movements and spatial distribution of Arctic Char in Qasigiyat Lake are variable from year to year and influenced by weather forcing (mainly precipitation) affecting freshwater inflows to the system and salinity conditions. Tidal effects also appear to be important, as outlined during later discussions on CPUE trends (below).

Data sources and fishing locations

Participants agreed that the sources of data used for the assessment of Qasigiyat Lake Arctic Char be clearly documented so it would be easy to understand which data were being used (e.g., fishery-independent data, fishery-dependent data, subsistence data). Suggestions were made to specify some of the uncertainties associated with data from the Nunavut Wildlife Harvest Study (subsistence harvest data) and the DFO Fisheries Management Harvest Information System (FMHIS) database (fishery- dependent data). Regarding the fishery-independent data, it was decided that the number of nets from different mesh sizes that were set in each year should appear in the document, along with net height, soak time, and the depth at which individual nets were set, if available. It was also decided that the use of a single, smaller experimental mesh size in 2004 and 2006 (as opposed to multi-mesh nets in other years) should be specified throughout the research document.

Figures, maps and pictures of Qasigiyat Lake were examined by the participants to come to agreement on (i) the locations of the boundaries between the fjord and the lower lake, and

between the lower lake and the upper lake in the system (harvesters and scientists suspect Arctic Char occur in the upper lake but this has yet to be demonstrated); and (ii) the exact emplacement of fishing locations used for the collection of fishery-independent data as well as by fishers for commercial fishing. This information will be included in revised maps and figures in the research document. A map of Cumberland Sound was also examined by participants to determine the current extent of the winter sea ice in Cumberland Sound and in the Ptarmigan Fjord area.

Trends in CPUE

There was consensus among meeting participants that the pooled CPUE data from all gear types was indicative of currently sustainable harvest. It was however recommended that variability around mean CPUE estimates be quantified and reported.

The observation of trends in CPUE prompted extensive discussions on factors likely to affect catch rates of Arctic Char in Qasigiyat Lake. These included (i) inter-annual differences in timing and locations of fishery-independent data sampling, sampling methods, samplers and the purpose of the sampling; and (ii) environmental factors like tides, precipitation and annual snowfall, affecting movements and spatial distribution of Arctic Char in the system.

A participant suggested that CPUE information from different gear types in 2009 may indicate a transition in size structure for the stock, or a cyclical pattern in the abundance of larger versus smaller fish. Yet fishers argued that differences in the timing of sampling and annual rainfalls will greatly affect the abundance and size of the fish being caught in the fjord. Fishers described the pattern by which Arctic Char move into upstream-most areas of Qasigiyat Lake with the one big tide occurring during the month of August (i.e., August spring tide). It was noted that this pattern differs from adjacent stocks/areas in Cumberland Sound where Arctic Char will move upstream with the July spring tide or September spring tide. Fishers also explained how winters with significant snowfalls are usually followed by a greater abundance of large Arctic Char in the fjord during summer time (likely as a result of enhanced freshwater runoff in the spring). Spatial segregation of large and small Arctic Char with depth was also discussed. Experts commented on having observed a greater abundance of smaller Arctic Char when fishing in deeper areas, and fishers commented on harvesting more mature Arctic Char in shallower areas.

Uncertainties surrounding CPUE information (and biological features) were thoroughly discussed and assessed. These discussions underlined the value and importance of integrating traditional knowledge information in the elaboration of scientific sampling design. Factors identified as potential sources of bias in the fishery-independent data will need to be considered for future data collection. Timing of sampling in relation to environmental variables like spring tides was an important factor to be considered, as this affects movements and spatial distribution of Arctic Char in Qasigiyat Lake.

Finally, participants agreed that the CPUE data from the earlier test fishery (March 1982 and 1984) were not comparable to the more recent CPUE data (August and September 2003 to 2010) since they were collected at different times of year, and likely different locations.

Biological Results

Trends in biological characteristics from fishery-independent data were generally corroborated by fishers' observations. Consistency in weight-length relationships and increasing mean weights and condition factors over time in the fishery-independent data agreed with a general consensus among fishers that Arctic Char are currently bigger (fatter) and healthier-looking than they used to be in the past.

Discussions of length-frequency and age-frequency distributions and trends in mean length at age over time emphasised the importance of having fishery-independent data collection temporally and spatially consistent so that data are comparable. More specifically, the participants recommended aligning the timing of sampling with environmental cues like the August spring tides that influence Arctic Char movements and distribution in the system. Consistency in net depth, mesh sizes and locations, and consideration of weather factors like annual precipitations when collecting and analyzing biological data was also recommended. It was acknowledged that future sampling designs should involve collecting bathymetry and salinity information, as this will provide a better understanding of the Qasigiyat Lake environment.

Participants agreed that the abundance of large Arctic Char and the presence of larger-size fish in the catch in 2009-2010 was a good sign for the stock. Some participants questioned the weaker representation of smaller-size Arctic Char in samples from recent years. Yet there was consensus that no conclusions could be drawn about trends due to inconsistent sampling and the resulting sampling bias.

Meeting participants agreed that Arctic Char length-at-age was generally consistent over the 2003-2006 period. Length-at-age data for recent years (2007-2010) however were unavailable at the time of the meeting, and should be obtained and analyzed to more fully examine trends.

It was recognized and agreed during the examination of growth and maturity data that life-history types (anadromous versus resident fish) should be distinguished. One expert recommended removing all Arctic Char that are sexually mature at a small size from the maturity analysis, as a way to exclude resident fish. This suggestion was accepted and will be incorporated when the working paper is revised following the meeting, including a re-evaluation of age-at-first maturity.

Other suggestions were made to (i) compare weight-length relationships using factorial analysis and include sample sizes on weight-length figures; (ii) include sampling locations (lake vs fjord) in length and age-frequency figures; (iii) include error bars on all biological trend (mean length, age, etc.) figures, and disconnect the trend line between the 1982-1984 data and 2003-onward data.

Other important points from the discussions

- Fishers commented that small, resident-like Arctic Char are present in all systems in Cumberland Sound, and are usually considered a distinct population (from the larger, sea-migrating Arctic Char) by elders and community members.
- Fishers indicated that within a particular river system, different lakes will have different-looking Arctic Char.
- Fishers mentioned that small Arctic Char are usually the first ones migrating upstream in the fall in most Cumberland Sound systems. This pattern of size-segregation of the run contrasts with that observed in Labrador stocks and in some Western Arctic populations, where larger individuals are first to go upstream.
- Fishers and community members commented on the abundance of Capelin (and the occurrence of Capelin spawning) in the Cumberland Sound Area in recent years. They explained how the flesh of Arctic Char became paler (or "more pink") for the first few years when Capelin were observed in the area, but is now becoming "red" again.
- Fishers discussed occasional salmon catches in the Cumberland Sound Area, which they say have been more frequent in recent years. DFO staff from Iqaluit mentioned unofficial

reports of salmon being caught in Frobisher Bay and at the mouth of the Sylvia Grinnell River in recent years also.

- Fishers stated that 2010 was an exceptional year for Arctic Char harvests in Qasigiyat Lake, with "*more and larger fish than ever*".
- Qasigiyat Lake is located at a distance from the community resulting in greater time commitments and transportation costs for fishers. In addition, the stock is a difficult one to fish due to the tidal and bathymetric characteristics of the system.
- Qasigiyat Lake is not an important source of Arctic Char for people from Iqaluit as it is too far and too difficult to travel to in the wintertime. So although areas in the lake remain free of ice throughout the winter and may result in potentially higher vulnerability of Arctic Char to winter fishing, this is not an issue at this time. Local participants expressed interested in harvesting more fish from Qasigiyat Lake. All participants agreed that the Qasigiyat stock appears to be stable under the current level of harvest from all sources. If scientific sampling is no longer being undertaken community members hoped they would be able to increase their harvest by the average annual amount that had been taken for scientific purposes.
- All participants agreed that the stock may be able to handle a slightly higher harvest.- It was agreed that this request would be put forward to DFO - Resource Management for a decision in the future.
- Fishers' interest in fishing a higher quota in Qasigiyat Lake is affected by how the Pangnirtung HTO allocates the quota amongst the fishers.
- Fishers spoke of geographical scales and feasibility issues within Cumberland Sound, where there is only a narrow time-window in August when Arctic Char begin to move upstream in most systems and are readily available for commercial harvests.
- Concerns from DFO Resource Management regarding the lack of compliance in reporting fisheries data under exploratory licenses for Qasigiyat Lake and other Cumberland Sound fisheries were tabled. Some fishers recalled reporting their catch to the Pangnirtung HTO. Others explained that in some years, competition among fishers to harvest from a large number of stocks/sites in a limited time-frame results in a lack of time to complete catch reports.
- Community members and fishers expressed interests in seeing more research done on Qasigiyat Lake Arctic Char, in particular research that would look into the presence/absence of fish in the upper-most areas of the system.

REVIEW OF THE SCIENCE ADVISORY REPORT ON QASIGIYAT LAKE ARCTIC CHAR.

Introductory remarks

The meeting Chair explained that the objective of day two was to agree on the science advice on the sustainability of the current Qasigiyat Lake Arctic Char harvest. The meeting participants thoroughly reviewed each section of the science advisory report (SAR) and agreed on the detailed content.

Context and Summary

Meetings participants agreed on the content of the context and summary sections. .

Species biology

Meetings participants agreed on the content of the species biology section. Two additions to this section were proposed and accepted by participants: (1) to add a note on the effect of tidal cycles on Arctic Char movement in Qasigiyat Lake; (2) to add a note on capelin occurrence and abundance in Cumberland Sound in recent years, as this may affect the diet of Qasigiyat Arctic Char.

Harvest information

Participants indicated that subsistence harvest of Arctic Char from Qasigiyat Lake was likely less than 150 kg annually. Fishers stated that 4.5" inch (114 mm) mesh gillnets are commonly used for subsistence harvest of Arctic Char in this system.

One fisherman pointed out that scientific harvest should be quantified and included in harvest numbers reported. All participants agreed. Participants further agreed that total harvest from all sources should be compiled for all years and averaged over the recent period (2003-2010) to make the advice more concise.

It was also agreed that uncertainties in the fishery-dependent data from the FMHIS database (such as the likelihood of incomplete reporting/trade records in some years) should be specified in the report.

Meetings participants agreed on the final content of harvest-related sections of the SAR.

Stock delineation

There was consensus among meeting participants to include in the report that the scientific assumption of stock distinctiveness for Qasigiyat Lake Arctic Char is supported by traditional knowledge. Fishers believe that Qasigiyat Lake Arctic Char are distinct from other stocks in the Cumberland Sound Area, and experience lower overwintering mortality compared to Arctic Char from other systems, due to the presence of open-water areas in the lake throughout the winter.

Stock size

Participants agreed that there is currently no estimate of stock size for Qasigiyat Lake Arctic Char. Fishers questioned what would be required to estimate the size of the stock. Different methods (fish trap, counting fence, Didson imaging sonar) were discussed. The benefits of indirect (i.e., video counting) methods like the Didson camera were described (e.g., less handling of Arctic Char, less avoidance behaviour by fish).

Stock trends

Meetings participants agreed on the content of all stock trend sections of the report provided all suggestions and changes identified during the review of the working document would be included.

At this point, recent age information for the stock was presented (as mean ages by year) and discussed by the RAP participants. There was consensus that the age data supported the general conclusion that the stock is doing well and appears to be harvested at or below a sustainable level.

Sources of uncertainty

Sources of uncertainty in the assessment of the Qasigiyat Lake Arctic Char stock were reviewed and agreed upon by meeting participants.

Recommendations

Recommendations for Arctic Char from Qasigiyat Lake were formulated, reviewed and agreed upon by meeting participants.

Conclusions and Advice

Conclusions and Advice on the Arctic Char stock from Qasigiyat Lake were formulated by participants for inclusion in the report. There was consensus that harvest rate is unknown, due to a lack of stock size estimate, but that current harvests of Qasigiyat Arctic Char appear to be sustainable. Current harvest considered all sources including the scientific sampling not just the reported harvest.

Fishers from Pangnirtung are not concerned about the status of the Arctic Char stock from Qasigiyat Lake. They consider the stock to be healthy and abundant and able to sustain higher harvest levels. The fishers request that the proportion of fish taken by DFO Science (approximately 250 kg/year) be added to the quota. This information was included in the outlook sub-section of the conclusions and advice section of the SAR.

Other considerations

During SAR discussions, fishers expressed concerns regarding impending anthropogenic development (diamond mining) in the vicinity of Qasigiyat Lake. In this context, they recommended documenting benchmark water quality and fish health information on the system.

Fishers explained how traditional knowledge relates Arctic Char skin thickness to river length. Arctic Char inhabiting shorter river systems have thinner skin, and Arctic Char inhabiting longer rivers have thicker skin.

According to fishers, stone weirs were never used for harvesting Arctic Char in the Ptarmigan Fjord area.

Based on their long experience of fishing in Cumberland Sound and the present assessment, Pangnirtung fishers and elders believe that this stock can sustain a higher harvest level in the range of 1750 kg (3850 lbs). The fishers and elders of Pangnirtung noted that DFO Science removed up to 250 kg annually as fisheries-independent data samples. They concluded from this assessment that the Qasigiyat Lake Arctic Char stock can withstand a harvest removal of 1750 kg (3850 lbs), and they request that the Qasigiyat Lake quota be amended to reflect this total.

CONCLUDING NOTES

Participants of the RAP on Qasigiyat Lake Arctic Char agreed with the science advice and rationale for science advice to be delivered in the SAR for this stock. All content of the document was reviewed and agreed upon by the participants. The meeting Chair ended the meeting by describing the outputs that would be generated from the meeting (SAR, Proceedings and Research Document) and their respective, approximate timeframe. The Chair thanked all participants for their contributions. Some of the fishers likewise expressed thanks for the opportunity to attend the meeting and to make valuable contributions.

The meeting ended with a closing prayer by Peter Kanayuk from Pangnirtung.

APPENDIX 1 – TERMS OF REFERENCE

Qasigiyat Arctic Char Assessment – Central and Arctic Regional Advisory Meeting

January 10-11, 2011

Iqaluit, Nunavut

Chair: Ross Tallman

Context

The Ptarmigan (Qasigiyat) Fiord is one of several waterbodies in the Cumberland Sound area that is presently fished for Arctic Char (*Salvelinus alpinus*) under a stage II exploratory fishing licence. Historically, Qasigiyat was fished in the winter months (January to March), in the lake. Presently, Qasigiyat is being fished in the Fiord during the late summer months (late July to August). The objective of fishing under a stage II exploratory licence is to determine whether a population can sustain a commercially viable operation. An analysis of biological (age, length and weights) and catch and effort data allows Science to assess the status of Arctic Char population's vulnerability to exploitation at present exploratory harvests rates, and advise on converting an exploratory fishery to a commercial fishery. Such data also provides a reliable baseline for future fisheries stock assessments. Biological and catch and effort data are requested as a licence condition for exploratory fisheries following the five-year exploratory fishery protocol. For some waterbodies, these types of data are also collected through Fisheries and Oceans Canada (DFO) Science's stock assessment research program as fishery-independent sampling. This is the case in the Qasigiyat system. Fisheries and Aquaculture Management (FAM) Sector of DFO has requested that Science provide an updated summary of information collected from Cumberland Sound Arctic Char stocks. This Regional Advisory Process (RAP) will provide an update on the status of Qasigiyat Arctic Char and recommend a long-term plan for this fishery.

Objectives

The following objectives will be addressed:

- Assess and report on the current status of Qasigiyat Arctic Char, including a review of all new information;
- Highlight sources of uncertainty in the assessment;
- Provide advice on a total sustainable harvest level for Qasigiyat Arctic Char;
- Develop a monitoring plan to assess the long-term sustainability of the fishery (e.g. identify information needs, timeframes, and monitoring protocols.

Expected Publications

A Canadian Science Advisory Secretariat (CSAS) Research Document will be produced from the working paper presented and reviewed at the meeting. The advice from the meeting will be published as a Science Advisory Report. Finally, a proceedings report summarizing the deliberations of the participants will be published in the CSAS Proceedings Series.

Participation

Experts or knowledge holders from Pangnirtung fish harvesters, Pangnirtung Hunters and Trappers Organization (HTO), Government of Nunavut (Fisheries and Sealing), Pangnirtung

Fisheries Ltd., DFO Science and Fisheries Management and the University of Manitoba will be invited to participate in this advisory meeting.

APPENDIX 2 – LIST OF PARTICIPANTS

Name	Affilitation
Joshua Aakuludjuk	Pangnirtung Fisherman
Brian Dempson	DFO-Science, NL Region
Leah Idlout-Paulson	interpreter
Seemeonie Keenainnaq	Pangnirtung Fisherman
Janelle Kennedy	Government of Nunavut -Fisheries and Sealing
Patrick Kilabuk	Pangnirtung HTO
Peter Knanayuk	Pangnirtung Fisherman
Chris Lewis	DFO-Resource Management, C&A Region
Tracey Loewen	University of Manitoba
Zoya Martin	DFO-Science, C&A Region
Laymee Naksuk	Pangnirtung Fisherman
Marie-Julie Roux (Rapporteur)	DFO-Science, C&A Region
Jean-Sébastien Moore	University of British Columbia
Charlotte Sharkey	DFO-Resource Management, C&A Region
Ross Tallman (Meeting Chair)	DFO-Science, C&A Region
Kendra Ulrich	University of Manitoba / Pangnirtung Fisheries Ltd
Jimmy Uniukshagak	Pangnirtung Fisherman
Angela Young	Government of Nunavut -Fisheries and Sealing

APPENDIX 3 –MEETING AGENDA

Regional Peer-Review Meeting Qasigiyat Lake (Arctic Char)

Frobisher Inn, Iqaluit, NU

10-11 January 2011

Chair Dr. Ross Tallman

Monday, January 10

Time	Presenter
9:00 Welcome and Introductions	Dr. R. Tallman
9:15 Purpose of Meeting	Dr. R. Tallman
9:30 Presentation of Background Information	Zoya Martin
10:30Presentation of Methods	Zoya Martin
12:00 Break for Lunch	
1:00 Presentation of Stock Assessment Analysis and Results	Zoya Martin
3:00 Traditional Knowledge Discussion	
3:30General Discussion	
4:45Overview of accomplishments of the day	Dr. R. Tallman
Overview of itinerary for tomorrow	Dr. R. Tallman
5:00 Meeting Adjourned	Dr. R. Tallman

Tuesday, January 11

Time	Presenter
9:00 Welcome and Overview of itinerary	Dr. R. Tallman
9:15 Review of wording and content in general introduction	Zoya Martin
10:15Review of wording and content of methods and analysis	Zoya Martin
12:00 Break for Lunch	
1:00 Review of wording and content of results	Zoya Martin
2:30 Review of wording and content discussion and conclusion	Zoya Martin
3:30General Discussion	
4:30 Overview of accomplishments of this meeting	Dr. R. Tallman
4:45Overview of next steps for all participants	Dr. R. Tallman
5:00 Meeting Adjourned	Dr. R. Tallman